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sklearn.cross_validation.train_test_split

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`sklearn.cross_validation.train_test_split(*arrays, **options)` [source]

Split arrays or matrices into random train and test subsets

Quick utility that wraps input validation and `next(iter(ShuffleSplit(n_samples)))` and application to input data into a single call for splitting (and optionally subsampling) data in a oneliner.

Read more in the User Guide.

Parameters: ***arrays** : sequence of indexables with same length / shape[0]

allowed inputs are lists, numpy arrays, scipy-sparse matrices or pandas dataframes.

New in version 0.16: preserves input type instead of always casting to numpy array.

test_size : float, int, or None (default is None)

If float, should be between 0.0 and 1.0 and represent the proportion of the dataset to include in the test split. If int, represents the absolute number of test samples. If None, the value is automatically set to the complement of the train size. If train size is also None, test size is set to 0.25.

train_size : float, int, or None (default is None)

If float, should be between 0.0 and 1.0 and represent the proportion of the dataset to include in the train split. If int, represents the absolute number of train samples. If None, the value is automatically set to the complement of the test size.

random_state : int or RandomState

Pseudo-random number generator state used for random sampling.

stratify : array-like or None (default is None)

If not None, data is split in a stratified fashion, using this as the labels array.

New in version 0.17: stratify splitting

Returns: **splitting** : list, length = 2 * len(arrays),

List containing train-test split of inputs.

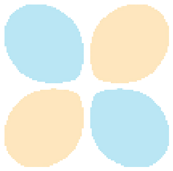
New in version 0.16: Output type is the same as the input type.

Examples

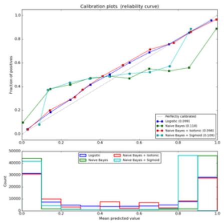
```
>>> import numpy as np
>>> from sklearn.cross_validation import train_test_split
>>> X, y = np.arange(10).reshape((5, 2)), range(5)
>>> X
array([[0, 1],
       [2, 3],
       [4, 5],
       [6, 7],
       [8, 9]])
>>> list(y)
[0, 1, 2, 3, 4]
```

```
>>> X_train, X_test, y_train, y_test = train_test_split(
...     X, y, test_size=0.33, random_state=42)
...
>>> X_train
array([[4, 5],
       [0, 1],
       [6, 7]])
>>> y_train
[2, 0, 3]
>>> X_test
array([[2, 3],
       [8, 9]])
>>> y_test
[1, 4]
```

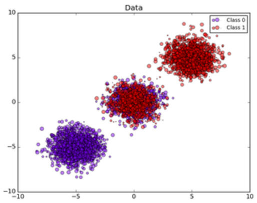
Examples using `sklearn.cross_validation.train_test_split`



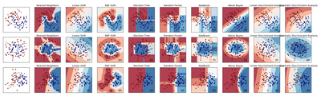
Faces recognition example using eigenfaces and SVMs



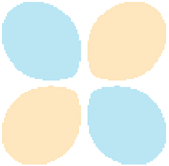
Probability Calibration curves



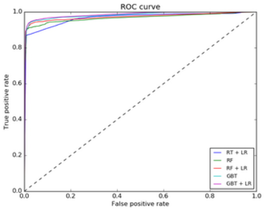
Probability calibration of classifiers



Classifier comparison



Partial Dependence Plots



Feature transformations with ensembles of trees

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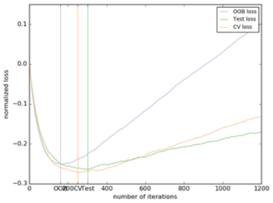
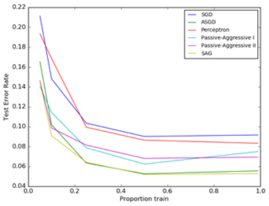
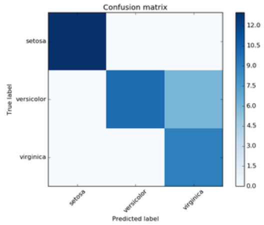


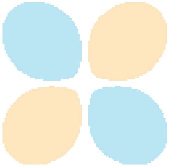
Gradient Boosting Out-of-Bag estimates



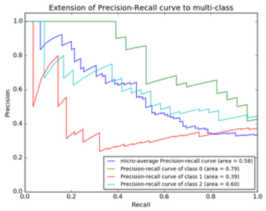
Comparing various online solvers



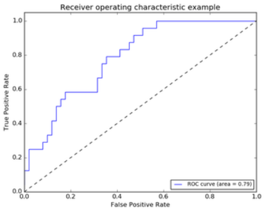
Confusion matrix



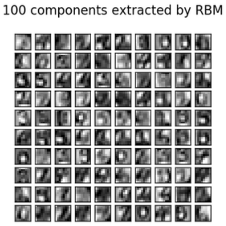
Parameter estimation using grid search with cross-validation



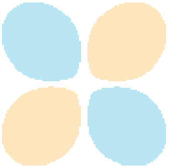
Precision-Recall



Receiver Operating Characteristic (ROC)



Restricted Boltzmann Machine features for digit classification



Using FunctionTransformer to select columns